In re Application of: **Yaling Fan, Mark A. Toffle, Xu Zuo and Srinivas Tadepalli**
Assignee: **SEAGATE TECHNOLOGY LLC**
Application No.: **10/768,595** Group Art Unit: **2627**
Filed: **January 30, 2004** Examiner: **Dismery E. Mercedes**
For: **FLOW OR WINDAGE CONTROL FOR A CANTILEVERED HEAD ASSEMBLY**

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Commissioner for Patents
P. O. Box 1450
Alexandria, Virginia 22313-1450

ATTENTION: Board of Patent Appeals and Interferences

Sir:

APPELLANT'S BRIEF

This APPELLANT'S BRIEF is filed responsive to the Notice of Appeal filed November 16, 2007 and the Advisory Action mailed November 2, 2007. The required fees, any required petition for extension of time for filing this Brief, and the authority and time limits established by the Notice of Appeal are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains these items under the following headings, and in the order set forth below:

I. REAL PARTY IN INTEREST
II. RELATED APPEALS AND INTERFERENCES
III. STATUS OF CLAIMS
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I. REAL PARTY IN INTEREST

The real party in interest in this Appeal is Seagate Technology LLC.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this Appeal.

III. STATUS OF CLAIMS

The status of the claims in this application is:

Claim	Status
1-27. (Cancelled).	
28. (Previously presented)	Independent.
29. (Previously presented)	Depends from claim 28.
30. (Previously presented)	Depends from claim 28.
31. (Previously presented)	Depends from claim 30.
32. (Previously presented)	Depends from claim 28.
33. (Previously presented)	Depends from claim 28.
34. (Previously presented)	Depends from claim 28.
35. (Previously presented)	Depends from claim 34.
36. (Previously presented)	Depends from claim 28.
37. (Previously presented)	Depends from claim 28.
38. (Previously presented)	Independent.
39. (Previously presented)	Depends from claim 38.

40. (Previously presented)	Depends from claim 38.
41. (Previously presented)	Depends from claim 38.
42. (Previously presented)	Depends from claim 38.
43. (Previously presented)	Depends from claim 38.
44. (Previously presented)	Independent.
45. (Previously presented)	Depends from claim 44.
46. (Previously presented)	Depends from claim 45.
47. (Previously presented)	Depends from claim 44.
48. (Previously presented)	Independent.
49. (Previously presented)	Depends from claim 48.
50. (Previously presented)	Depends from claim 49.
51. (Previously presented)	Depends from claim 48.

A. TOTAL NUMBER OF CLAIMS IN APPLICATION

Claims in the application: 28-51.

B. STATUS OF ALL THE CLAIMS

1. Claims canceled: 1-27.
2. Claims withdrawn from consideration but not canceled: None
3. Claims pending: 28-51.
4. Claims allowed: None.
5. Claims rejected: 28-29, 31, 33-34, 36-38 and 40-51.
6. Claims objected to: 30, 32, 35 and 39.

C. CLAIMS ON APPEAL

Claims now on appeal: 28-29, 31, 33-34, 36-38 and 40-51.

IV. STATUS OF AMENDMENTS

Post-final claim amendments were presented in the Response filed October 16, 2007 to correct minor errors with regard to the respective dependencies of claims 30 and 35. The Applicant gratefully acknowledges entry of these amendments by the Examiner, as indicated by the Advisory Action mailed November 2, 2007.

Upon further review of the application, additional minor errors were noted with regard to the drawings and claims. The formal drawings filed on August 13, 2004 identify FIGS. 3A-3B and 5A-5B, whereas the corresponding text in the specification identifies these respective drawings as FIGS. 3-1, 3-2, 5-1 and 5-2 (see e.g., specification, page 2, lines 19-20 and 22-26; page 4, lines 14-28; and page 5, line 29 to page 6, line 11). With regard to the claims, it is apparent that claim 40 has redundant language therein, and claim 51 should depend from claim 48 rather than claim 44.

The Applicant's Attorney apologizes for not having previously requested amendments to correct these errors. However, as it is believed that these errors will have no substantive effect on the present proceedings, the Applicant's Attorney requests that correction of these errors be held in abeyance until after the present appeal is concluded.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The embodiments of the present invention as recited by the language of independent claims 28, 38, 44 and 48 are generally directed to a method and apparatus for fluidic flow control adjacent a cantilevered assembly.

Independent claim 28 generally features an apparatus (such as exemplary disc servo writers 170-8 in FIG. 8 and 170-12 in FIGS. 12-13; specification, page 7, lines 28-29 and page 9, lines 26-27) comprising a cantilevered assembly (such as 100 in FIGS. 1-5 and 10; 100-6 in FIG. 6; 100-7 in FIG. 7; 100-8 in FIG. 8; 100-9 in FIG. 9; 100-12 in FIG. 12; and 100-13 in FIG. 13; see also specification, page 1, lines 13-15; page 3, lines 13-19; and page 11, lines 26-29) with an upstream leading edge (such as 140 in FIGS. 3A-3B; specification, page 4, lines 14-28) and a downstream trailing edge (such as 142 in FIGS. 3A-3B;

specification, page 4, lines 14-28); and a flow control device (such as 124 in FIGS. 1 and 6; 124-8 in FIG. 8; page 4, lines 3-6) comprising a blower assembly (such as 126 in FIGS. 2-4, 5A, 9; 126-9 in FIG. 9; 126-12 in FIG. 12; 126-13 in FIG. 13) which provides blowing pressure (specification, page 4, lines 7-10) to the downstream trailing edge (see e.g., FIGS. 1, 3A and 4; page 4, lines 24-28).

Dependent claim 33 depends from base claim 28 and further generally a shroud (such as 222 in FIGS. 12-13; specification, page 11, lines 1-13) proximate to a downstream region (such as 122 in FIGS. 1-2, 4-5, 9 and 13; specification, page 3, lines 26-28; page 4, lines 7-10) of the cantilevered assembly, wherein the flow control device further comprises a blower nozzle (such as 130 in FIGS. 2 and 4-5; 130-7 in FIG. 7; 130-9 in FIG. 9; 130-12 in FIG. 12; specification, page 4, lines 7-10; page 7, lines 15-25) coupled to the blower assembly to provide the blowing pressure through at least one passage (such as 224 in FIGS. 12-13; specification, page 11, lines 2-6) in the shroud.

Dependent claim 34 depends from base claim 28 and further generally features the recited flow control device as further comprising a vacuum assembly (such as 154 in FIGS. 4 and 5B; 154-9 in FIG. 9; 154-13 in FIG. 13; page 5, lines 4-7) which provides suction pressure to the upstream leading edge (see FIGS. 4, 5B, 9 and 13; page 5, lines 4-7 and page 11, lines 7-12).

Independent claim 38 generally features an apparatus (such as exemplary disc servo writers 170-8 in FIG. 8 and 170-12 in FIGS. 12-13; specification, page 7, lines 28-29 and page 9, lines 26-27) comprising a cantilevered assembly (such as 100 in FIGS. 1-5 and 10; 100-6 in FIG. 6; 100-7 in FIG. 7; 100-8 in FIG. 8; 100-9 in FIG. 9; 100-12 in FIG. 12; and 100-13 in FIG. 13; see also specification, page 1, lines 13-15; page 3, lines 13-19; and page

11, lines 26-29) with an upstream leading edge (such as 140 in FIGS. 3A-3B; specification, page 4, lines 14-28) and a downstream trailing edge (such as 142 in FIGS. 3A-3B; specification, page 4, lines 14-28); and a flow control device (such as 124 in FIGS. 1 and 6; 124-8 in FIG. 8; page 4, lines 3-6) comprising a vacuum assembly (such as 154 in FIGS. 4 and 5B; 154-9 in FIG. 9; 154-13 in FIG. 13; page 5, lines 4-7) which provides suction pressure solely to a region proximate the upstream leading edge (see FIGS. 4, 5B, 9 and 13; page 5, lines 4-7 and page 11, lines 7-12).

Dependent claim 40 depends from claim 38 and generally features the recited flow control device as further comprising a blower assembly (such as 126 in FIGS. 2-4, 5A, 9; 126-9 in FIG. 9; 126-12 in FIG. 12; 126-13 in FIG. 13) which provides blowing pressure (specification, page 4, lines 7-10) to the downstream trailing edge (see e.g., FIGS. 1, 3A and 4; page 4, lines 24-28).

Independent claim 44 generally features a method (see e.g., originally filed method claim 20 in the specification at page 16, lines 7-12) comprising steps of establishing a fluidic flow path (such as illustrated in FIG. 3A) across a cantilevered assembly (such as 100 in FIGS. 1-5 and 10; 100-6 in FIG. 6; 100-7 in FIG. 7; 100-8 in FIG. 8; 100-9 in FIG. 9; 100-12 in FIG. 12; and 100-13 in FIG. 13; see also specification, page 1, lines 13-15; page 3, lines 13-19; and page 11, lines 26-29) from an upstream leading edge (such as 140 in FIGS. 3A-3B; specification, page 4, lines 14-28) to a downstream trailing edge thereof (such as 142 in FIGS. 3A-3B; specification, page 4, lines 14-28); and supplying blowing pressure (specification, page 4, lines 7-10) from a blower assembly (such as 126 in FIGS. 2-4, 5A, 9; 126-9 in FIG. 9; 126-12 in FIG. 12; 126-13 in FIG. 13) to the downstream trailing edge (see e.g., FIGS. 1, 3A and 4; page 4, lines 24-28).

Dependent claim 47 depends from base claim 44 and further generally features a step of supplying suction pressure (see FIGS. 4, 5B, 9 and 13; page 5, lines 4-7 and page 11, lines 7-12) from a vacuum assembly (such as 154 in FIGS. 4 and 5B; 154-9 in FIG. 9; 154-13 in FIG. 13; page 5, lines 4-7) to the upstream leading edge.

Independent claim 48 generally features a method (see e.g., originally filed method claim 20 in the specification at page 16, lines 7-12) comprising steps of establishing a fluidic flow path (such as illustrated in FIG. 3A) across a cantilevered assembly (such as 100 in FIGS. 1-5 and 10; 100-6 in FIG. 6; 100-7 in FIG. 7; 100-8 in FIG. 8; 100-9 in FIG. 9; 100-12 in FIG. 12; and 100-13 in FIG. 13; see also specification, page 1, lines 13-15; page 3, lines 13-19; and page 11, lines 26-29) from an upstream leading edge (such as 140 in FIGS. 3A-3B; specification, page 4, lines 14-28) to a downstream trailing edge thereof (such as 142 in FIGS. 3A-3B; specification, page 4, lines 14-28); and providing suction pressure (see FIGS. 4, 5B, 9 and 13; page 5, lines 4-7 and page 11, lines 7-12) from a vacuum assembly (such as 154 in FIGS. 4 and 5B; 154-9 in FIG. 9; 154-13 in FIG. 13; page 5, lines 4-7) to the upstream leading edge without providing said suction pressure proximate to the downstream trailing edge (see FIGS. 4, 5B, 9 and 13).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds for rejection presented for review on appeal is the final rejection of 28-29, 31, 33-34, 36-38 and 40-51 under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,728,062 to Ou-Yang ("Ou-Yang '062") in view of U.S. Patent No. 5,818,658 to Balster et al. ("Balster '658").

VII. ARGUMENT

While all of the rejected claims have been subjected to the same grounds of rejection, the claims do not stand or fall together. Rather, the patentability of various claims will be argued under separate subheadings below, in accordance with 37 CFR 41.37(c)(1)(vii).

A. PATENTABILITY OF CLAIMS 28-37, 44-47 AND 51

Independent claim 28 is an apparatus claim that generally features "*a flow control device comprising a blower assembly which provides blowing pressure to the downstream trailing edge*" of the recited "*cantilevered assembly.*" Independent claim 44 is a method claim that generally corresponds to apparatus claim 28. For the purposes of this section, the patentability of claims 28-37, 44-47 and 51 will be argued using representative base claim 28.

The final rejection of claim 28 is respectfully traversed on the basis that the cited references fail to teach or suggest this claim language, as well as on the basis that the skilled artisan would not find it desirable to arrive at the claimed combination in view of the cited references. Each of these will be discussed below.

1. THE SKILLED ARTISAN WOULD CONCLUDE THAT A VACUUM PUMP THAT SUPPLIES VACUUM PRESSURE IS NOT THE SAME THING AS, AND INDEED IS THE OPPOSITE OF, A BLOWER ASSEMBLY THAT PROVIDES BLOWING PRESSURE AS CLAIMED

A *prima facie* case of obviousness requires a showing of a teaching or suggestion for each claim limitation appearing in the claim. *In re Royka*, 180 USPQ 580 (CCPA 1974); *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970); MPEP 2143. In the final rejection of claim

28, the Examiner asserted that Balster '658 teaches the "*blower assembly*" recited therein. See final Office Action, page 3, line 1. This is respectfully traversed.

As previously noted in the Applicant's Response filed October 16, 2007, Balster '658 teaches a vacuum pump 26 which applies vacuum to the HGA 12. Balster '658, col. 2, lines 56-67; col. 3, lines 2-4; FIG. 2. The skilled artisan would immediately understand that a vacuum pump that supplies vacuum is not the same thing as, and indeed is the opposite of, the "*blower assembly which provides blowing pressure*" recited by claim 28.

In construing a claim term, the Examiner is obliged to give the "*broadest reasonable interpretation consistent with the specification.*" *Phillips v. AWH Corp.*, 75 USPQ2d 1321 (Fed. Cir. 2005)(en banc); MPEP 2111. An interpretation that is inconsistent with the specification is not "*reasonable.*" *In re Morris,* 44 USPQ2d 1023 (Fed. Cir. 1997). Further, the Examiner is required to construc the claim language in accordance with the plain meaning of the claim, which is determined in accordance with the claim language and the specification of which the claim forms a part. *Phillips, Supra;* MPEP 2111.01.

The specification of the present application distinguishes between a blower assembly and a vacuum source, with the former blowing air (or other medium) to the cantilevered member while the latter provides suction from the cantilevered member. See specification, page 4, lines 7-13 ("*the blower assembly 126 includes a nozzle 130 directed to provide pressure (e.g. air, gas or other medium) from a pressure source or blower 132 proximate to the downstream region 122 of the cantilevered head assembly.*"); page 4, line 29 to page 5, line 10 ("*Vacuum assembly 154 provides suction proximate to the upstream region 120 of the cantilevered head assembly to control windage or flow disturbances*"); FIGS. 2, 3A, 4.

The respective terms are used in the specification of the present application in a mutually exclusive sense. While both a blower assembly and a vacuum assembly can be used at the same time on opposing sides of the cantilevered assembly (see e.g., FIG. 4), the specification consistently distinguishes between a blower assembly on the one hand, and a vacuum assembly on the other. The phrase "blower assembly" is never used to describe a vacuum assembly, or *vice versa*. Rather, both are presented as alternative types of exemplary components of the disclosed flow control device 124. Specification, page 5, lines 11-19.

The plain meaning of "*blowing pressure*" from a "*blower assembly*" is thus a higher than ambient pressure, as consistently used throughout the claims and specification. Because the specification makes clear that a blower assembly is something other than a vacuum assembly, the Examiner cannot reasonably interpret the claim phrase "*blower assembly*" so broadly as to read on the vacuum assembly of Balster '658 which provides a sub-ambient pressure. See e.g., *In re Buszard,* 504 F.3d 1364 (Fed. Cir. 2007) (the claim term "flexible" could not be interpreted so broadly as to cover a "rigid" prior art product, as "rigid" is the opposite of "flexible"). The rejection is therefore improper, and reversal of the rejection is respectfully requested on this basis.

2. THE EXAMINER MISCHARACTERIZES THE BREADTH OF ALTERNATIVE STRUCTURES TAUGHT OR SUGGESTED BY BALSTER '658

In the Advisory Action mailed November 2, 2007, the Examiner maintained the propriety of the final rejection of the claims on the basis that the teachings of Balster '658 were considered broad enough to encompass the recited "blower assembly" of claim 28. This is also respectfully traversed.

The Examiner stated in the Advisory Action as follows:

> *The cited reference Balster et al., the examiner cited col. 2, line 51-col. 3, line 15, wherein Balster is relied upon for disclosing a flow control device adjacent to a nozzle an d provides air pressure (flow of air) and Balster further discloses that although a vacuum pump is described, other means or device that creates sub-ambient pressure adjacent to the suspension may be used (i.e. a blower assembly).* Advisory Action, page 2, lines 1-7 (emphasis added)

The Applicant generally agrees that Balster '658 teaches that devices other than the vacuum pump 26 can be used, but respectfully disagrees that such other devices could be interpreted as a "*blower assembly which provides blowing pressure*" as recited in claim 28. The Applicant further respectfully submits that the above characterization by the Examiner of this portion of Balster '658 is incomplete, and thus contrary to the actual teachings and suggestions of the reference.

The actual text of Balster '658 in this portion of the reference reads as follows:

> *Located adjacent to the HGA 12 is a nozzle 24. The nozzle 24 is coupled to a system which induces a flow of air 30 through an orifice 50 as indicated by the arrows shown in FIG. 2. The orifice 50 is the opening to the nozzle. The size and shape of the orifice 50 can be optimized for different HGAs 12. A vacuum pump 26 is attached to an air line 28 that is connected to the nozzle 24. The pump 26 draws air from beneath the suspension arm 18 through the orifice 50 and into the nozzle 24. The air flow creates a sub-ambient condition on the underside of the suspension arm 18. Ambient air moves around the suspension arm and toward the sub-ambient void. The flow of air pushes the entire HGA down to the tip of the nozzle 24. Although a vacuum pump 26 is described, it is to be understood that the system may include some other means of drawing a vacuum through the air line 28 and the nozzle 24, or any other device that creates a sub-ambient pressure adjacent to the suspension beam 18.*

The skilled artisan would immediately understand the phrase "sub-ambient pressure" as used by Balster '658 to mean a reduced pressure as compared to ambient pressure; in other

words, a "vacuum pressure." This is illustrated by the use of the prefix "sub," by the direction of the airflow arrows in FIG. 2 which pass into the nozzle 24, and by the use of the flow of air to the sub-ambient pressure void as the mechanism that deflects the HGA.

Balster '658 consistently teaches, both in this section and elsewhere, the need to generate a sub-ambient pressure region on the underside of the suspension arm 18 in order to safely unload the HGA. For example, in col. 3, lines 46-65, Balster '658 teaches that even negative pressure sliders 14, which normally bias the heads 12 toward the disk 22, require the use of this sub-ambient pressure region to safely advance the HGA away from the disk 22. See col. 3, lines 62-65 ("*[i]t is believed that the sub-ambient air flow induced by the nozzle interrupts the negative air pockets and reduces, or eliminates, the counteractive pull force.*").

From this it can be seen that Balster '658 expressly teaches the skilled artisan that it is not enough to merely increase the pressure differential across the HGA in order to induce HGA deflection. Rather, a sub-ambient pressure void is required having a pressure that is reduced as compared to the pressure of the ambient surrounding atmosphere.

It follows, then, that whatever other types of devices might be contemplated by Balster '658 apart from the vacuum pump 26, such devices must explicitly generate a sub-ambient pressure region. A "*blower assembly which provides a blowing pressure to the downstream trailing edge*," as recited by claim 28, would not serve to generate the requisite sub-ambient pressure region of Balster '658. Indeed, such "blowing pressure" would clearly generate a pressurized region at a pressure above the ambient pressure, which is the opposite of what is taught by Balster '658.

There is nothing of record that remotely suggests that the skilled artisan would, or even could, generate the requisite sub-ambient pressure region using a blower assembly. It is

the Examiner's burden to provide evidence in support of this proposition, not the Applicant's burden to prove that it cannot occur. Nevertheless, the Applicant points out that even the formation of a Venturi using a blower assembly would not fairly teach or suggest the claim language, as such would not "*provide blowing pressure to the trailing edge*" as claimed.

The Examiner's statement that Balster '658 can be interpreted as teaching the recited "*blower assembly*" of claim 28 is therefore without merit, as being directly contrary to the actual teachings of the reference as well as directly contrary to the understanding of the skilled artisan. Reversal of the final rejection is respectfully requested on this basis as well.

3. THE SKILLED ARTISAN WOULD NOT FIND IT DESIRABLE TO COMBINE/MODIFY THE CITED REFERENCES TO ARRIVE AT THE CLAIMED SUBJECT MATTER

As the Board will appreciate, an obviousness rejection is evaluated by the Office in view of *Graham v. John Deere Co.*, 383 US 1 (1966). Such analysis requires: (A) the claimed invention must be considered as a whole; (B) the references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination; (C) the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and (D) reasonable expectation of success is the standard with which obviousness is determined. See MPEP 2141.

Considering the subject matter of claim 28 as a whole (per *Graham*), claim 28 is generally directed to a flow control device which controls a flow adjacent a cantilevered assembly using a "*blower assembly which provides blowing pressure to the downstream trailing edge*" of the cantilevered assembly. Exemplary operation of the claimed

combination is generally illustrated in the drawings by FIG. 3A (with the blower assembly) and FIG. 3B (without the blower assembly).

Considering the cited references as a whole (per *Graham*), Ou-Yang '062 generally teaches a disk drive with a cantilevered actuator assembly 32 which moves adjacent discs 20/22/28 within a housing base. See Ou-Yang '062, col. 4, lines 21-25 and FIGS. 1 and 3. A circumferentially extending shroud surface 314 of the base is provisioned with channels 326, 327 which redirect airflow 330 within the base. Col. 4, lines 55-58; col. 5, lines 52-64. The Examiner correctly notes that Ou-Yang '062 is silent with regard to teaching or suggesting either a blower assembly or a vacuum assembly, but instead relies on the interior configuration of the base itself to direct airflow in a passive manner.

As discussed above, Balster '658 generally teaches an HGA loader/unloader that generates a sub-ambient pressure region adjacent an HGA 12 opposite a storage disk 22 to controllably retract the HGA from the disk in a direction parallel to a rotational axis of the disk. See Balster '658, col. 2, lines 58-63 and FIG. 2. This is preferably accomplished by the use of the aforementioned vacuum pump 26 and nozzle 30 which draws air equally from both sides of the HGA 12 so that the HGA is retracted without tilting or skewing the head. Col. 3, lines 46-53.

The Applicant respectfully submits that the skilled artisan would not find it desirable to arrive at the claimed subject matter of claim 28 by combining and/or modifying the cited Ou-Yang '062 and Balster '658 references. While the skilled artisan might find it desirable to incorporate the unloading system of Balster '658 to assist in the loading or unloading of HGAs into the system of Ou-Yang '062, as discussed above, this would not result in the recited "*blower assembly which provides a blowing pressure*," as recited by claim 28. The

additional use of the channels from Ou-Yang '062 would not somehow transform the vacuum system of Balster '658 into the recited "blower assembly."

It is well settled that mere conclusory statements by the Examiner with regard to the obviousness of the combination are insufficient to establish a *prima facie* case of obviousness. Rather there must be "*some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.*" *In re Kahn*, 441 F.3d 997, 988 (Fed. Cir. 2006); *KSR v. Teleflex*, 127 S.Ct. 1727 (2007).

In the present case, the Examiner posited that the skilled artisan would find it desirable to combine Ou-Yang '062 with Balster '658 "*to allow the head to fly at any height without introducing undesirable slider angle thus reducing the chances of head crash.*" Final Office Action, page 3, lines 4-5. This statement is merely conclusory, since it fails to show how that the combination of references would actually result in the subject matter of claim 28. Simply incorporating the sub-ambient pressure region of Balster '658 to the system of Ou-Yang '062, as suggested by the Examiner, gets the skilled artisan no closer to the claimed combination.

The rejection is thus based on an improper hindsight reconstruction of the claims, and is improper as a matter of law. *Graham, Supra.* Reversal of the final rejection is respectfully requested on this basis as well.

B. PATENTABILITY OF DEPENDENT CLAIM 33

Dependent claim 33 is believed patentable on the basis that this claim depends from independent claim 28, and the patentability of independent claim 28 (as well as independent

claim 44) has been argued above. The separate patentability of claim 33 will now be argued in this section.

Claim 33 generally features "*a shroud proximate to a downstream region of the cantilevered assembly, wherein the flow control device further comprises a blower nozzle coupled to the blower assembly to provide the blowing pressure through at least one passage in the shroud.*"

The Examiner found the shroud 314 and corresponding channel 327 taught by Ou-Yang '062 to correspond to the recited "*shroud*" and "*at least one passage in the shroud*" of claim 33. Final Office Action, page 3, lines 11-16. The Examiner then concluded that it have been desirable to the skilled artisan to direct the nozzle 30 of Balster '658 through the channel 327 of Ou-Yang '062 to again "*allow the head to fly at any height without introducing undesirable slider angle, thus reducing the chances of head crash.*" Final Office Action, page 3, lines 19-21. This is respectfully traversed.

As noted above, in order to sustain a *prima facie* case of obviousness, *Graham* requires a showing of a reasonable expectation of success by the Examiner in making the combination. MPEP 2141. In the present case, no such reasonable expectation of success can be shown.

It will be recalled that, in order to adjust the fly height of the HGA 12 in Balster '658, a sub-ambient pressure region is generated adjacent the HGA on the side opposite the disk 22. It is not reasonable to conclude that providing the blowing pressure of claim 33 through the shroud channel 327 in Ou-Yang '062, which extends parallel with the HGA, would in fact "*allow the head to fly at any height without introducing undesirable slider angle, thus reducing the chances of head crash,*" as suggested by the Examiner. Indeed, it is difficult to

see how the fly height could be adjusted at all with this arrangement, much less, how this would result in the claimed combination of claim 33.

The rejection of claim 33 is thus also based on an improper hindsight reconstruction of the claim. Reversal of the rejection of this claim is respectfully requested on this basis as well.

C. PATENTABILITY OF DEPENDENT CLAIMS 34 AND 47

Dependent claim 34 depends from base claim 28, and dependent claim 47 depends from base claim 44. These dependent claims are thus believed to be patentable as depending from patentable base claims for the reasons set forth above. The separate patentability of these claims, however, will also be argued in this section using claim 34 as a representative claim.

Claim 34 generally features "*wherein the flow control device further comprises a vacuum assembly which provides suction pressure to the upstream leading edge*." Claim 34 thus recites both a "*blower assembly which provides blowing pressure*," and a "*vacuum assembly which provides suction pressure*." This is further clearly not taught or suggested by the cited references.

The vacuum pump 26 (or other means for providing the sub-ambient pressure region) of Balster '658 cannot be reasonably construed as constituting BOTH a blower assembly AND a vacuum assembly. Yet the Examiner has done exactly that in formulating the final rejection of claim 34. See Final Office Action, page 4, lines 1-4. This is clearly improper.

Unless the specification or prosecution history indicates otherwise, the same claim term is to be consistently interpreted as the same structure. *Fin Control v. OAM*, 265 F.3d

1311, 1318 (Fed. Cir. 2001). In the present case, the Examiner has ignored the distinctions between "blowing assembly" and "vacuum assembly" as these terms appear in claim 34, and has arbitrarily asserted that the structure in Balster '658 constitutes both.

Moreover, the Examiner has failed to provide any rationale as to why the skilled artisan would in fact find it desirable to provide both a blowing assembly operable on the recited trailing edge and a vacuum assembly operable on the recited leading edge, as claimed. *Kahn, Supra.* The rejection is thus based on conclusory statements, which reduces the analysis to improper hindsight reconstruction of the claim. *Graham, Supra.*

Accordingly, it is respectfully submitted that claims 34 and 47 are patentable for these reasons as well, and reversal of the rejection of these claims is respectfully requested.

D. PATENTABILITY OF CLAIMS 38-43

Independent claim 38 is an apparatus claim that generally features "*a flow control device comprising a vacuum assembly which provides suction pressure solely to the downstream trailing edge*" of the recited "*cantilevered assembly.*" For the purposes of this section, the patentability of claims 38-43 will be argued using representative base claim 38.

The final rejection of claim 38 is respectfully traversed on the basis that the cited references fail to teach or suggest this claim language, as well as on the basis that the skilled artisan would not find it desirable to arrive at the claimed combination in view of the cited references. Each of these will be discussed below.

1. THE SKILLED ARTISAN WOULD NOT REASONABLY VIEW BALSTER '658 AS SUPPLYING SUCTION PRESSURE SOLELY TO THE UPSTREAM LEADING EDGE OF THE CANTILEVERED ASSEMBLY, AS CLAIMED

The Examiner found the vacuum pump 26 taught by Balster '658 to meet the language, "*a vacuum assembly which provides suction pressure solely to a region proximate the upstream leading edge*" of claim 38. This is respectfully traversed.

As previously discussed by the Applicant in the Response filed October 16, 2007, the vacuum pump taught by Balster '658 generates a sub-ambient pressure region adjacent the HGA 12 that causes an equal flow of air around both the upstream leading edge and the downstream trailing edge of the HGA. Balster '658, col. 2, lines 59-63; see also FIG. 2. An oversized nozzle opening 50 ensures that the airflow passes around both sides of the HGA 12. Col. 3, lines 35-40.

In this way, the pull force generated by the sub-ambient pressure region bends the suspension portion 18 of the HGA evenly and along the normal pivot axis about which the suspension is designed to bend. Col. 3, lines 46-48. This prevents twisting or torsion of the suspension which might result in damage to either the HGA 12 or the disk 22. Col. 3, lines 48-54.

Because Balster '658 explicitly teaches to apply the suction pressure evenly to both upstream and downstream edges, Balster '658 cannot be reasonably construed as teaching or suggesting to apply suction pressure "*solely to a region proximate the upstream leading edge.*" as claimed by claim 38. The Applicant therefore respectfully requests reversal of the final rejection of claim 38, as no *prima facie* case of obviousness has been established for the claim. *Royka, Supra*; MPEP 2143.03.

2. THE SKILLED ARTISAN WOULD HAVE NO REASONABLE EXPECTATION OF SUCCESS IN MODIFYING THE CITED REFERENCES TO ARRIVE AT THE CLAIMED COMBINATION

A *prima facie* case of obviousness requires a showing of a reasonable expectation of success in making the proposed combination. *Graham, Supra*; MPEP 2141. In the present case, no evidence of such reasonable expectation has been shown, nor can be shown.

As noted above, Balster '658 teaches the need to generate a sub-ambient pressure region such that the HGA 12 is deflected evenly away from the disk 22. Applying the recited suction pressure "*solely to a region proximate the upstream leading edge*" in the manner claimed, however, would likely induce the very twisting and damage to the HGA 12 that Balster '658 is careful to avoid.

It follows that there is nothing of record that would fairly suggest that the skilled artisan would in fact find it desirable to modify Balster '658 to apply the suction pressure "*solely to a region proximate the upstream leading edge*," as claimed, since Balster '658 expressly teaches to not do this.

For these reasons, the Applicant again respectfully submits that the rejection is based on an improper hindsight reconstruction of the claims, and requests reversal of the final rejection.

E. PATENTABILITY OF CLAIMS 48-50

Finally, independent claim 48 is a method claim that generally features "*supplying suction pressure proximate to the upstream leading edge without providing said suction pressure proximate to the downstream trailing edge*" of the recited "*cantilevered assembly*."

It is noted that the language of claim 48 is generally similar to that of claim 38 discussed above, so the arguments set forth above with regard to the patentability of claim 38 apply to the patentability determination of claim 48 as well. Nevertheless, claim 48 is worded slightly differently than claim 38, and so a separate review of the patentability of claim 48 (and the claims depending therefrom) is respectfully requested.

1. THE SKILLED ARTISAN WOULD NOT REASONABLY VIEW BALSTER '658 AS SUPPLYING SUCTION PRESSURE PROXIMATE THE UPSTREAM LEADING EDGE WITHOUT SUPPLYING SUCTION PRESSURE PROXIMATE THE DOWNSTREAM TRAILING EDGE, AS CLAIMED

The Examiner found the vacuum pump 26 taught by Balster '658 to teach the step of "*supplying suction pressure proximate to the upstream leading edge without providing said suction pressure proximate to the downstream trailing edge*" of claim 48. This is respectfully traversed.

As noted above, Balster '658 generates the sub-ambient pressure region in such a way as to induce an equal flow of air around both the upstream leading edge and the downstream trailing edge of the HGA 12, thereby ensuring that the HGA is not twisted during the unloading process. Col. 3, lines 46-54.

Because Balster '658 explicitly teaches to apply the suction pressure evenly to both upstream and downstream edges, Balster '658 cannot be reasonably construed as teaching or suggesting to apply suction pressure proximate the upstream leading edge without applying suction pressure proximate the downstream trailing edge, as generally claimed by claim 48. Reversal of the final rejection of claim 48 is respectfully requested on this basis.

2. THE PROPOSED MODIFICATION OF BALSTER '658 WOULD DESTROY ITS INTENDED PURPOSE IN ADJUSTING HGA FLY HEIGHT

As with claim 38, the Examiner has failed to make any showing in support of the view that the skilled artisan would have a reasonable expectation of success in making the proposed combination. First, it is not clear how the structure of Balster '658 could in fact be modified to apply the recited suction pressure to only one side of the HGA 12 without applying it to the other side.

The Examiner appears to be suggesting that it might be "possible" to relocate the structure of Balster '658 by rotating the nozzle 90 degrees and moving it to one side of the HGA, thereby meeting the claim language of "*supplying suction pressure proximate to the upstream leading edge without providing said suction pressure proximate to the downstream trailing edge.*"

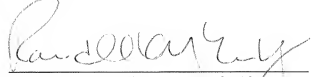
The Applicant points out, however, that the resulting system would no longer serve to adjust the fly height of the HGA 12. As discussed at great length above, Balster '658 adjusts the HGA fly height by generating the sub-ambient pressure region that acts equally on both sides of the HGA. Moving this sub-ambient pressure region to one side, as apparently suggested by the Examiner, would destroy the intended purpose of Balster '658. *In re Gordon*, 221 USPQ 1125 (Fed. Cir. 1984); MPEP 2143.01.

For these reasons, the Applicant again respectfully submits that the rejection is based on an improper hindsight reconstruction of the claims, and requests reversal of the final rejection.

F. Conclusion

In view of the foregoing discussion, it is respectfully submitted that all pending claims 28-51 are patentable over the cited references. The Applicant respectfully prays the Board reconsider and direct passage to allowance of all pending claims.

Respectfully submitted,

By: 

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VIII. CLAIMS APPENDIX

Claims 1-27 (Cancelled).

28. (Previously presented) An apparatus comprising:

a cantilevered assembly with an upstream leading edge and a downstream trailing edge; and

a flow control device comprising a blower assembly which provides blowing pressure to the downstream trailing edge.

29. (Previously presented) The apparatus of claim 28, wherein the flow control device further comprises a nozzle coupleable to the blower assembly to supply the blowing pressure proximate the downstream trailing edge.

30. (Previously presented) The apparatus of claim 28, wherein the cantilevered assembly is characterized as a first cantilevered assembly, wherein the apparatus further comprises a second cantilevered assembly, wherein the first and second cantilevered assemblies are coupled to an actuator having a stack height, and wherein the nozzle comprises an elongated outlet having a dimension substantially corresponding to the stack height.

31. (Previously presented) The apparatus of claim 28, wherein the flow control device further comprises a flow sensor coupled to a controller to regulate the blowing pressure.

32. (Previously presented) The apparatus of claim 28, further comprising a fluidic dam downstream of the cantilevered assembly and a fluidic stripper upstream of the cantilevered assembly, wherein the flow control device further comprises a nozzle coupled to the blower assembly positioned relative to a gap between the fluidic dam and the fluidic stripper.

33. (Previously presented) The apparatus of claim 28, further comprising a shroud proximate to a downstream region of the cantilevered assembly, wherein the flow control device further comprises a blower nozzle coupled to the blower assembly to provide the blowing pressure through at least one passage in the shroud.

34. (Previously presented) The apparatus of claim 28, wherein the flow control device further comprises a vacuum assembly which provides suction pressure to the upstream leading edge.

35. (Previously presented) The apparatus of claim 34, wherein the flow control device provides the suction pressure through a passage in an air stripper.

36. (Previously presented) The apparatus of claim 28, wherein the cantilevered assembly comprises a transducer configured to write data to a storage medium.

37. (Previously presented) The apparatus of claim 28, characterized as a multi-disc servo writer configured to write servo data to a plurality of rotatable discs.

38. (Previously presented) An apparatus comprising:

a cantilevered assembly with an upstream leading edge and a downstream trailing edge; and

a flow control device comprising a vacuum assembly which provides suction pressure solely to a region proximate the upstream leading edge.

39. (Previously presented) The apparatus of claim 38, wherein the flow control device provides the suction pressure through a passage in an air stripper.

40. (Previously presented) The apparatus of claim 38, wherein the flow control device further comprises a flow control device comprising a blower assembly which provides blowing pressure proximate to the downstream trailing edge.

41. (Previously presented) The apparatus of claim 38, wherein the flow control device further comprises a flow sensor coupled to a controller to regulate the suction pressure.

42. (Previously presented) The apparatus of claim 38, wherein the cantilevered assembly comprises a transducer configured to write data to a storage medium.

43. (Previously presented) The apparatus of claim 38, characterized as a multi-disc servo writer configured to write servo data to a plurality of rotatable discs.

44. (Previously presented) A method comprising:

establishing a fluidic flow path across a cantilevered assembly from an upstream leading edge to a downstream trailing edge thereof; and

supplying blowing pressure from a blower assembly to the downstream trailing edge.

45. (Previously presented) The method of claim 44, wherein the fluidic flow of the establishing step is generated by rotation of a disc adjacent the cantilevered assembly.

46. (Previously presented) The method of claim 45, further comprising a step of using the cantilevered assembly to write servo data to the disc during the establishing and supplying steps.

47. (Previously presented) The method of claim 44, further comprising supplying suction pressure from a vacuum assembly to the upstream leading edge.

48. (Previously presented) A method comprising:

establishing a fluidic flow path across a cantilevered assembly from an upstream leading edge to a downstream trailing edge thereof; and

supplying suction pressure proximate to the upstream leading edge without providing said suction pressure proximate to the downstream trailing edge.

49. (Previously presented) The method of claim 48, wherein the fluidic flow of the establishing step is generated by rotation of a disc adjacent the cantilevered assembly.

50. (Previously presented) The method of claim 49, further comprising a step of using the cantilevered assembly to write data to the disc during the establishing and supplying steps.

51. (Previously presented) The method of claim 44, further comprising applying blowing pressure from a blower assembly to the downstream trailing edge during the establishing and supplying steps.

IX. EVIDENCE APPENDIX

No additional evidence is included.

X. RELATED PROCEEDINGS APPENDIX

There exist no relevant related proceedings concerning this Appeal before the Board.